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| 09/314,819 | 05/19/1999 | CHRISTOPHER PETER LAROSA | CS10088 | 5679 |

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EXAMINER

ELALLAM, AHMED

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2662

12

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/314,819

Applicant(s)

LAROSA ET AL.

Examiner

AHMED ELALLAM

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-16, 19-22, 28, 29, 32-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Storm et al, US (6,144,649).

Regarding claim 1, with reference to figure 1, Storm discloses a method for activating a radiotelephone 104 operable in spread spectrum multiple access radiotelephone system comprising:

the radiotelephone wakes up after sleeping time to acquire a pilot signal and assigning a finger (demodulation branch), see column 10, lines 27-54;

the searcher receiver provides alignment that provides the best correlation to the finger sequence generator associated with at least one receiver finger, the receiver finger being assigned to the detected pilot signal (s). See column 9, lines 49-65.

(Corresponding to activating at least a portion of a searcher receiver; receiving a

transmitted signal; activating at least a demodulation branch after a predetermined event occurs, the predetermined event occurring after activating at least a portion of the searcher receiver).

Regarding claim 2, Storm discloses that the pilot signal is spread by a pseudorandom (PN) sequence. See column 4, lines 33-52.

Regarding claim 3, Scot discloses acquiring a PN sequence timing of the pilot signal that produces correlation energy above a predetermined threshold. See column 5, lines 38-53.

Regarding claim 4, Scott discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, see column 9, lines 49-65. (Corresponding to synchronizing the at least one demodulation branch to the at least a portion of the searcher receiver after activating the at least one demodulation branch).

Regarding claim 5, slewing of finger LSG (Long Sequence Generator) to bring them into alignment with pilot of interest. See column 9, lines 49-65. (Corresponding to activating a system timing unit after acquiring the PN sequence timing; and synchronizing the system timing unit to the at least one demodulation branch after synchronizing the at least one synchronization branch).

Regarding claim 6, the features of synchronizing the system timing unit occurs at predetermined PN chip boundary of the PN sequence, the predetermined PN chip denoting less than full length of PN sequence, are inherent to Storm, because that is needed for the radiotelephone to stay in synchrony with base station according to the

standards of Slotted paging mode CDMA system, in the case a page/or incoming traffic detection occurs after pilot acquisition, so that the radiotelephone can demodulate paging/or incoming traffic.

Regarding claim 7, it is inherent to Storm that synchronizing the radiotelephone comprises a state of a PN roll count and a state of a PN position count, because that is needed for the radiotelephone timing alignment determination with the received Pilot PN sequence.

Regarding claims 8 and 13, with reference to figure 1, Storm discloses a method for activating a radiotelephone 104 operating in a slotted paging mode, the radiotelephone operable in Code Division Multiple Access (CDMA) radio telephone system comprising:

the radiotelephone wakes up after sleeping time to acquire a pilot signal and assigning a finger (demodulation branch), see column 10, lines 27-54;

the searcher receiver provides alignment that provides the best correlation to the finger sequence generator associated with at least one receiver finger, the receiver finger being assigned to the detected pilot signal (s). See column 9, lines 49-65; and acquiring a PN sequence timing of the pilot signal that produces correlation energy above a predetermined threshold. See column 5, lines 38-53, wherein the pilot signal is spread by a pseudorandom (PN) sequence. See column 4, lines 33-52. In addition, Storm discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, see column 9, lines 49-65.

Regarding claim 9, Storm discloses slewing of finger LSG (Long Sequence Generator) to bring them into alignment with pilot of interest. See column 9, lines 49-65. (Corresponding to activating a system timing unit after acquiring the PN sequence timing; and synchronizing the system timing unit to the at least one demodulation branch after synchronizing the at least one synchronization branch).

Regarding claim 10, the features of synchronizing the system timing unit occurs at predetermined PN chip boundary of the PN sequence, the predetermined PN chip denoting less than full length of PN sequence, are inherent to Storm, because that is needed for the radiotelephone to stay in synchrony with base station according to the standards of Slotted paging mode CDMA system, in the case a page/or incoming traffic detection occurs after pilot acquisition, so that the radiotelephone can demodulate paging/or incoming traffic.

Regarding claim 11, Storm discloses that at least one receiver finger uses a slew counter value provided by the searcher, to align its finger LSG to the timing of the detected pilot signal. See column 9, lines 49-65. (Corresponding to claimed synchronizing a branch timing unit to the searcher receiver, and loading state information from the searcher receiver into the at least one demodulation branch).

Regarding claim 12, Storm does not explicitly disclose decoding an information signal with at least one finger after synchronizing system timing unit, however, the decoding of information signal is inherent to Storm, because that is the purpose of implementing the different steps of synchronizing the radiotelephone with the base station.

Regarding claim 14, with reference to figures 1 and 2, Storm discloses a radiotelephone system 104 operating in a slotted paging mode CDMA comprising:

- a searcher receiver 114, periodically activated to find a pilot signal of suitable signal strength, the searcher receiver acquiring a pseudorandom noise (PN) sequence timing of the pilot signal after each periodic activation of the searcher receiver, see column 4, lines 33-63 and column 5, lines 29-36;
- plurality of fingers 122-126 (claimed at least one demodulation branch) coupled to the searcher receiver 114, the searcher receiver provides alignment that provides the best correlation to the finger sequence generator associated with at least one receiver finger, the receiver finger being assigned to the detected pilot signal (s). See column 9, lines 49-65;
- a controller 116 that provides control timing of the Radiotelephone 104, see column 5, lines 11-15.

(Corresponding to claimed at least one demodulation branch coupled to the searcher receiver; and control circuitry to periodically activate the at least one demodulation branch after each periodic activation of the searcher receiver and to direct the at least one demodulation branch to synchronize relative to the searcher receiver, after each periodic acquiring of the PN sequence timing).

Note: the limitations of claim 14 can be rejected based on admitted prior art alone, see specification pages 1-4.

Regarding claim 15, Scott discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, and slewing of finger LSG (Long Sequence Generator) to bring them into alignment with pilot of interest. See column 9, lines 49-65. (Corresponding to the limitation of claim 15).

Regarding claim 16, with reference to figure 1, Storm discloses Logic and control block 116. (Corresponding to claimed control circuitry comprises a microprocessor).

Regarding claim 19, with reference to figure 2, Storm discloses a real-time PN generator 206 coupled to the searcher receiver.

Regarding claim 20, with reference to figure 2, Storm discloses:

a receiver sample buffer 202 coupled to the searcher receiver 114 for storing samples of detected pilot signals;

a NRT PN generator 208 (claimed high-speed PN generator) used for searching the stored samples for pilot signal and associated pilot signal PN timing that produces a correlation energy above a predetermined threshold, see column 5, lines 38-53, column 6, lines 59-67 and column 7, lines 1-9.

Regarding claims 21, 22, claims 21, 22 are method claims and have substantially the scope of claim 8, thus they are subject to the same rejection.

Regarding claim 28, Scott discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, see column 9, lines 49-65.

Regarding claim 29, Storm discloses slewing of finger LSG (Long Sequence Generator) to bring them into alignment with pilot of interest. See column 9, lines 49-65.

Regarding claim 32, with reference to figure 2, Storm discloses:

a real-time PN generator 206 coupled to the searcher receiver.

a receiver sample buffer 202 coupled to the searcher receiver 114 for storing samples of detected pilot signals;

a NRT PN generator 208 (claimed high-speed PN generator) used for searching the stored samples for pilot signal and associated pilot signal PN timing that produces a correlation energy above a predetermined threshold, see column 5, lines 38-53, column 6, lines 59-67 and column 7, lines 1-9.

Regarding claim 33, claim 33 has substantially the same scope of claim 5, thus it is subject to the same rejection.

Regarding claim 34 and 35, claims 34 and 35 have substantially the same scope of claim 6, thus they are subject to the same rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17, 18, 23-27, 30, 31, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over storm in view of admitted prior art, See pages 1-5.

Regarding claim 17 as best understood, Strom discloses substantially all the limitations of claim 17, except it doesn't explicitly disclose the system timing unit synchronizes relative to the PN sequence timing of the pilot signal by receiving PN state information from the at least one demodulation branch.

However, prior art discloses that a SLAM event, defined as the synchronization of the system timing unit of the radiotelephone receiver modem to the pilot signal PN sequence, and the system timing unit controls the timing of the entire radiotelephone receiver modem and direct the operation of the receiver modem, and that for SLAM, the microprocessor directs the system timing unit of the receiver modem to synchronize to the timing of the demodulation branches and the searcher receiver, see page 4, lines 29-32 and page 5, lines 1-4.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time of the invention to provide the radiotelephone of Storm with the system timing synchronization apparatus of prior art so that the radiotelephone of Storm would be synchronized in a coherent fashion with the base transmitter, and providing proper demodulation of received signals.

Regarding claim 18, Strom discloses substantially all the limitations of claim 17, except it doesn't explicitly disclose that the system timing unit synchronizes at a predetermined PN chip boundary that occurs more frequently than a PN roll boundary.

However, prior art discloses that after synchronizing the searcher and demodulation branches relative to one another, slewing the internally generated PN sequence relative to the received PN sequence to establish a timing reference. (Reads

on the claimed system timing unit synchronizes at a predetermined PN chip boundary that occurs more frequently than a PN roll boundary).

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time of the invention to provide the radiotelephone of Storm with the slewing of locally generated PN sequences taught by prior art, so that the radiotelephone of Storm would synchronize with the base station providing the strongest pilot signal.

Regarding claims 23, 30 and 31, claim 23, 30 and 31 have substantially the same scope of claim 17, thus they are subject to the same rejection.

Regarding claim 24, Scott discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, see column 9, lines 49-65.

Regarding claim 25, Scott discloses that the searcher receiver 114 provides an LSG (Long Sequence Generator) value that corresponds to the best correlations to the finger, and slewing of finger LSG (Long Sequence Generator) to bring them into alignment with pilot of interest. See column 9, lines 49-65.

Regarding claims 26 and 27, claims 26 and 27 have substantially the same scope of claim 18, thus they are subject to the same rejection.

Regarding claims 36, claim 36 has the same limitations as indicated in rejected claims 14-20, thus it is rejected on the same ground.

Regarding claim 37, the features of synchronizing the system timing unit occurs at predetermined PN chip boundary of the PN sequence, the predetermined PN chip denoting less than full length of PN sequence, are inherent to Storm, because that is

needed for the radiotelephone to stay in synchrony with base station according to the standards of Slotted paging mode CDMA system, in the case a page/or incoming traffic detection occurs after pilot acquisition, so that the radiotelephone can demodulate paging/or incoming traffic.

Response to Arguments

3. Applicant's arguments filed February 16, 2004 have been fully considered but they are not persuasive.

112 2nd Paragraph rejections:

The rejections of claims 17 and 18 under 112 2nd Paragraph have been withdrawn in view of Applicants' argument.

Claims:

Applicant argues that Examiner attempt to equate assigning a finger (demodulation branch) with activating a demodulation branch is erroneous, because the assignment is different that the activation. Additionally Applicants argue that before a demodulation branch can be assigned, it needs to have been previously activated, and that a demodulation branch can be activated without being assigned. Applicant concluded that a demodulation branch can not be said to be equivalent to the activation of a demodulation branch. Examiner respectfully disagrees, because as claim 1 recites:

- activating at least a portion of a searcher receiver; receiving a transmitted signal; activating at least a demodulation branch after a predetermined event occurs, the predetermined event occurring after activating at least a portion of the searcher

receiver. Examiner notes, as a matter of prior art in general, that the activation of a searcher receiver is part of the CDMA standard, in addition a demodulation branch(es) activation is needed for demodulating received signal(s) so that correlation can be provided by the searcher receiver for acquiring the PN sequence (synchronization). Still further, the activation of the searcher receiver with the fingers (demodulation branches) are both substantially and simultaneously needed to carry out the synchronization with the base station(s) that provides the strongest signal (PN). Importantly, the claimed *"activating at least a demodulation branch after a predetermined event occurs"*, can be regarded as any event such as a trigger or a power-up event and so on, still further the claimed "at least one demodulation branch" can be interpreted as all the demodulation branches, and that is in contrast with Applicant assertion that only one or few branches are activated to save power as argued with reference to the specification. Examiner also notes that the assignment of the finger in Storm reference after the activation of the searcher is for the purpose of activating the finger so that demodulation of received signal can be carried out. See column 9, lines 49-65. Therefore the assignment of the finger of Storm is equivalent to the activation of Applicants demodulation branch(s), since assigning the branch(s) preceded the activation, and since both the assigning of branches result in the same function (demodulating received signals).

Finally, Examiner notes that Applicant Argument was generally based on mere comparison of Storm reference with Applicants 's invention; and was not specifically related to the claimed subject matter as indicated in claims 1-37. Examiner believes

that, given the reasonable broadest interpretation of claim limitations, that the rejection indicated above is proper and a prima facie is being established.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (703) 308-6069. The examiner can normally be reached on 9-5:30.

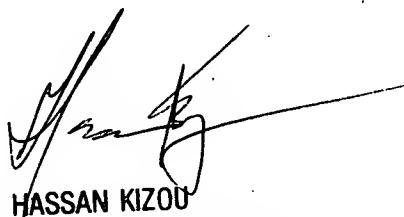
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 09/314,819

Art Unit: 2662

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
23 April 2004



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
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